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EXAMINER

FONTAINE, MONICA A

ART UNIT PAPER NUMBER

1732

DATE MAILED: 03/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

SK

Office Action Summary

Application No.

10/088,003

Applicant(s)

NAWRATH, PETER

Examiner

Monica A Fontaine

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 072202.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

It is noted that the examiner tried to contact Mr. Huckett by both phone numbers listed on the Application Data Sheet. At the phone number 505-266-2138, the receptionist did not speak English, and therefore she could not answer any of the examiner's questions. The phone number 505-268-7798 had been disconnected.

Specification

The title of the invention is too long. A new title is required that is concise and clearly indicative of the invention to which the claims are directed.

Claim Objections

Claim 21 is objected to because of the following informalities: Claim 21 contains the word "temporally" which is assumed to be a misspelling of "temporarily".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 18-20, 23-27, and 33-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Benz et al. (U.S. Patent 5,656,209). Regarding Claim 18, Benz et al., hereafter "Benz," show that it is known to carry out a method for continuously manufacturing films, webs, and sheets of plastics capable of forming optical images (Abstract), the method comprising the steps of guiding a melted plastic mass, pre-shaped as a sheet, into a roller gap of a calendar, the roller gap formed between a shaping engraving cylinder roller and a smoothing strip surrounding partially the shaping engraving cylinder roller (Figure 1); heating the shaping engraving surface of the cylinder roller to melting temperature in the roller gap, wherein the melted plastic mass is applied directly onto the shaping engraving surface of the heated cylinder roller (Column 3, lines 10-15); providing a profiling by cooling the melted plastic mass in the roller gap by heat removal on a side facing the shaping engraving surface (Figure 1; It is noted that cooling takes place in a open air environment.).

Regarding Claim 19, Benz shows the process as claimed as discussed above in the rejection of claim 18 above, including a method wherein the step of providing a profiling the heat removal is carried out in a controlled fashion along the path of the melted plastic mass about the cylinder roller such that on the side of the solidifying melted plastic mass facing the shaping engraving surface more heat is removed than on the smooth side facing the smoothing strip and the melted plastic mass is hardened in top edges of prisms of the profiling before the material strip exits from an exit gap of the calendar as a finished product (Figure 1; It is noted that there is more surface open to the atmosphere on the shaped side of the plastic mass on the smooth side, and therefore, the shaped side will become cooled faster than the smooth side.).

Regarding Claim 20, Benz shows the process as claimed as discussed above in the rejection of claims 18 and 19 above, including a method wherein the melted plastic mass solidified to the finished product is moved in an oppositely bent direction to storage and further processing after leaving the exit gap (Figure 1).

Regarding Claim 23, Benz shows the process as claimed as discussed above in the rejection of claim 18 above, including a method further comprising the steps of preparing the melted plastic mass which is pre-shaped as a sheet, in an extruder and transferring the melted plastic mass from the extruder via a wide slot nozzle directly onto the cylinder (Figure 1).

Regarding Claim 24, Benz shows the process as claimed as discussed above in the rejection of claim 18 above, including a method further comprising the steps of preparing the melted plastic mass, which is pre-shaped as a sheet, from a semi-finished plastic product by melting the semi-finished plastic product under a melting cover and subsequently directly transferring the melted plastic mass onto the cylinder roller (Figure 1).

Regarding Claim 25, Benz shows that it is known to have a device for performing a method for continuously manufacturing films, webs, and sheets of plastics capable of forming optical images (Abstract), wherein a melted plastic mass, pre-shaped as a sheet, is guided into a roller gap of a calendar, the roller gap formed between a shaping engraving cylinder roller and a smoothing strip surrounding partially the shaping engraving cylinder roller (Figure 1); heating the shaping engraving surface of the cylinder roller to melting temperature in the roller gap, wherein the melted plastic mass is applied directly onto the shaping engraving surface of the heated cylinder roller (Column 3, lines 10-15); providing a profiling by cooling the melted

plastic mass in the roller gap by heat removal on a side facing the shaping engraving surface (Figure 1; It is noted that cooling takes place in a open air environment.), the device comprising a cylinder roller having an exterior engraving sleeve (Figure 1); a smoothing strip partially surrounding the cylinder roller to form the roller gap (Figure 1); a positionable extruder having a wide slot nozzle , wherein an opening surface of the wide slot nozzle is adjustable longitudinally parallel to the surface of the cylinder roller so as to be variable with respect to spacing (Figure 1).

Regarding Claim 26, Benz shows the device as claimed as discussed above in the rejection of claim 25 above, including a heating device arranged shortly before an opening slot of the wide slot nozzle (Figure 1; It is noted that heating devices are known to be included in conventional extrusion devices.).

Regarding Claim 27, Benz shows the device as claimed as discussed above in the rejection of claim 25 above, including an exit roller having a diameter that is at least as large as a diameter of the cylinder roller, wherein an axis of rotation of the exit roller is displaceable for changing the surrounding stretch of the smoothing strip (Figure 1, elements 4 and 4'; Column 5, lines 28-63).

Regarding Claim 33, Benz shows the device as claimed as discussed above in the rejection of claim 25 above, including a device wherein the cylinder roller is comprised substantially only of an engraving sleeve and a heatable support roller arranged in the engraving sleeve for receiving a gap pressure of the roller gap and for linear axis-parallel heating of the engraving sleeve in the area of the roller gap (Figure 1; Column 5, lines 58-66).

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Regarding Claim 34, Benz shows that it is known to have a device for performing a method for continuously manufacturing films, webs, and sheets of plastic capable of forming optical images, wherein a melted plastic mass, pre-shaped as a sheet, is guided into a roller gap of a calendar, the roller gap formed between a shaping engraving cylinder roller and a smoothing strip, surrounding partially the shaping engraving cylinder roller; wherein the shaping engraving surface of the cylinder roller is heated to melting temperature in the roller gap wherein the melted plastic is applied directly onto the shaping engraving surface of the heated cylinder roller; and wherein a profiling by cooling the melted plastic mass in the roller gap is provided by heat removal on a side facing the shaping engraving surface (Figure 1; It is noted that cooling takes place in a open air environment.): a melting cover configured to melt a pre-manufactured semi-finished plastic product to a melted plastic mass, wherein the melting cover, for producing different temperatures, is connected to a heating member for heating a heating zone of the cylinder roller (Figure 1; Column 2, lines 59-67; Column 3, lines 1-31).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Benz, in view of Wheatley et al. (U.S. Patent 5,234,729). Benz shows the process as claimed as discussed above in the rejection of claim 19 above, but he does not show a specific cooling means. Wheatley et

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al., hereafter "Wheatley," show that it is known to carry out a method of making a film, wherein the melting temperature is present not within the entire rotating mass of the cylinder roller but only within a stationary heating zone of the cylinder roller, the method further comprising the step of preventing an increase of the heat in the cylinder roller mass by providing a cooling device and passing the melted plastic means through the cooling device [temporarily] after the introduction into the roller gap (Column 5, lines 18-23, 46-60). Wheatley and Benz are combinable because they are concerned with a similar technical field, namely that of methods which produce films usable in optical applications. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to provide Wheatley's specific cooling device in Benz's molding process in order to provide expedited cooling to the formed web.

Claims 22, 28, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benz, in view of Ferguson et al. (U.S. Patent 5,122,212).

Regarding Claim 22, Benz shows the process as claimed as discussed above in the rejection of claim 19 above, but he does not show a specific cutting direction or means. Ferguson et al., hereafter "Ferguson," show that it is known to carry out a method of making a film, comprising the step of cutting the finished product exiting from the calendar to length by a transverse movement of a saw matched to the moving speed of the product (Column 6, lines 39-45). Ferguson and Benz are combinable because they are concerned with a similar technical field, namely that of methods which produce plastic webs. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Ferguson's

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transverse cutting concept with Benz's molding method in order to achieve accurate sizing of the molded articles.

Regarding Claim 28, Benz shows the device as claimed as discussed above in the rejection of claims 25 and 27 above, but he does not show a device wherein the spacing of the exit roller from the cylinder roller is changeable. Ferguson shows that it is known to have a device wherein a spacing of the exit roller from a roller axle of the cylinder is changeable (Column 5, lines 40-59). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have a changeable space between the exit roller and the cylinder roller, as in Ferguson, during Benz's molding process in order to make films of varying thicknesses.

Regarding Claim 31, Benz shows the device as claimed as discussed above in the rejection of claim 25 above, but he does not show a tension-supported smoothing strip. Ferguson shows that it is known to have a device wherein the smoothing strips is an endless strip and wherein the device further comprises a strip guiding roller and a deflection roller for guiding the smoothing strip, wherein the smooth strip is tensioned by a hydraulically supported movement of the strip guiding roller and does not exert own pressure onto the surrounding surface of the cylinder roller, wherein the device further comprises a pressure strip, not touching the deflection roller and circulating inside of the smoothing strip about a tensioning roller, wherein a tension of the pressure strip is generated by a hydraulically supported movement of the tensioning roller (Column 5, lines 10-59). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use a tension-supported smoothing strip, as in

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Ferguson, in Benz's molding method in order to prevent too much pressure being exerted on the molded article.

Regarding Claim 32, Benz shows the device as claimed as discussed above in the rejection of claims 25 and 31 above, but he does not show cooling water nozzles. Ferguson shows that it is known to have a device further comprising cooling water nozzles positioned at the surrounding stretch of the smoothing strip and the pressure strip about the cylinder roller, wherein the smoothing strip and the pressure strip are strips, wherein the cooling water nozzles cool the strips by spraying cooling water on the strips and wherein cooling water sprayed by the cooling water nozzles is collected in a cooling water tank and removed by a cooling water discharge (Figure 2; Column 5, lines 60-68; Column 6, lines 1-5; It is noted that to be entitled to weight in method claims, recited structural limitations, "steel" in this case, must affect the method in a manipulative sense and not amount to mere claiming of a use of a particular structure. *Ex parte Pfeiffer* 135 USPQ 31.). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use cooling water nozzles, as in Ferguson, in Benz's molding process in order to provide direct and easy cooling of the molded article.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Benz, in view of Djordjevic et al. (U.S. Patent 4,753,587). Benz shows the device as claimed as discussed above in the rejection of claim 25 above, but he does not show a cooling table connected to the axle of the exit roller. Djordjevic et al., hereafter "Djordjevic," show that it is known to have a device comprising a cooling table connected by a pivot arm to the axle of the exit roller wherein the

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cooling table can be moved by the pivot arm into various angular positions, an angularly support table pivotably connected on the cooling table; and a deflection roller with a bearing connected to the cooling table (Column 4, lines 7-13, 31-36). Djordjevic and Benz are combinable because they are concerned with a similar technical field, namely that of devices which form flat sheets of plastic material. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use a pivotal cooling table, as in Djordjevic, in Benz's molding method in order to cool specific areas of the molded sheet.

Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Benz, in view of Wenzel et al. (U.S. Patent 6,129,652). Benz shows the device as claimed as discussed above in the rejection of claim 25 above, but he does not show a cooling device inside the roller. Wenzel et al., hereafter "Wenzel," show that it is known to have a device comprising a cooling water supply line and a cooling water removal line arranged in a roller axle of the cylinder roller, wherein the cooling water supply line guiding through the cylinder roller is provided with a spray nozzle arrangement and wherein cooling water sprayed by the spray nozzle arrangement is collected in the interior of the cylinder roller to a controlled level and is removed by a suction pipe of the cooling water removal line (Figures 1-4). Wenzel and Benz are combinable because they are concerned with a similar technical field, namely that of devices which contribute to the formation of plastic sheets. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Wenzel's cooling device in Benz's molding method in order to provide efficient cooling with no exterior tubing or equipment.

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the state of the art with regard to methods and devices which form plastic films and sheets:

U.S. Patent 4,764,101 to Capelle

U.S. Patent 4,874,571 to Muller

U.S. Patent 5,674,442 to Morita

U.S. Patent Application Publication 2002/0018908 to Smith et al.

U.S. Patent Application Publication 2003/0087573 to Erdos et al.

U.S. Patent 6,663,807 to Klug


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica A Fontaine whose telephone number is 571-272-1198.

The examiner can normally be reached on Monday-Friday 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Colaianne can be reached on 571-272-1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Maf
March 22, 2004



MICHAEL COLAIANNI
PRIMARY EXAMINER